

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently-Amended) A plasma processing method for implementing a plasma process on a silicon oxide film layer formed at a workpiece placed inside a process chamber by generating plasma from a process gas containing, at least, fluorocarbon introduced into said process chamber, wherein;

oxygen is intermittently added into the process gas, and

the length of time over which the oxygen is added into the process gas is short relative to the length of time over which the oxygen is not added into the process gas.

2. (Original) A plasma processing method according to claim 1, wherein;
the oxygen is cyclically added into the process gas.

3-4. (Cancelled).

5. (Currently Amended) [[A]] The plasma processing method according to claim 23 [[4]], wherein;
the relationship between the change occurring in the aspect ratio and the change occurring in the plasma composition is ascertained in advance and the quantity of oxygen added into the process gas is adjusted in conformance to the change in the plasma composition.

6. (Original) A plasma processing method according to claim 1, wherein;

the oxygen is added after the plasma has stabilized.

7. (Currently Amended) A plasma processing method for implementing a plasma process on a silicon oxide film layer formed at a workpiece placed inside a process chamber by generating plasma from a process gas containing, at least, fluorocarbon introduced into said process chamber, wherein;

oxygen is added into the process gas and the quantity of oxygen added into the process gas is increased/decreased in relative measure, and

the length of time over which the quantity of oxygen added into the process gas is increased is small relative to the length of time over which the quantity of oxygen added is decreased.

8. (Original) A plasma processing method according to claim 7, wherein;

the quantity of oxygen added into the process gas is increased/decreased cyclicly.

9-11. (Cancelled).

12. (Currently Amended) A plasma processing method according to claim 13

[[7]], wherein;

the quantity of oxygen added into the process gas is increased/decreased after the plasma has stabilized.

13. (Original) A plasma processing method for implementing a plasma process on a silicon oxide film layer formed at a workpiece placed inside a process chamber by generating plasma from a process gas containing, at least, fluorocarbon introduced into said process chamber, wherein;

oxygen is added into the process gas and the quantity of oxygen added into the process gas is increased in proportion to an increase in the aspect ratio of a contact hole formed at said silicon oxide film layer.

14. (Original) A plasma processing method according to claim 13, wherein;
the relationship between a change occurring in the aspect ratio and a change occurring in the plasma composition is ascertained in advance and the quantity of oxygen added into the process gas is adjusted in proportion to the change in the plasma composition.

15. (Original) A plasma processing method according to claim 13, wherein;
the quantity of oxygen added into the process gas is continuously increased.

16. (Original) A plasma processing method according to claim 13, wherein;
the quantity of oxygen added into the process gas is increased in stages.

17. (Currently Amended) A plasma processing method for implementing a plasma process on a silicon oxide film layer formed at a workpiece placed on a second electrode by introducing a process gas containing, at least, fluorocarbon into a process chamber, applying high-frequency power to a first electrode and said second electrode facing opposite each other inside said process chamber and thus raising the process gas to plasma, wherein;

the frequency of the high-frequency power applied to said second electrode is lower than the frequency of the high-frequency power applied to said first electrode;

the high-frequency power is intermittently applied to said first electrode; [[and]]
oxygen is intermittently added into the process gas;

a contact hole is formed at said silicon oxide film layer; and

the quantity of oxygen added into the process gas is increased in proportion to
an increase in the aspect ration of said contact hole.

18. (Original) A plasma processing method according to claim 17, wherein;

the oxygen is cyclically added into the process gas.

19. (Cancelled).

20. (Original) A plasma processing method for implementing a plasma process on a silicon oxide film layer formed at a workpiece placed on a second electrode by introducing a process gas containing, at least, fluorocarbon and oxygen into a process chamber, applying high-frequency power to a first electrode and said second electrode

facing opposite each other inside said process chamber and thus raising the process gas to plasma, wherein;

the frequency of the high-frequency power applied to said second electrode is lower than the frequency of the high-frequency power applied to said first electrode;

the high-frequency power is intermittently applied to said first electrode; and

said plasma process is implemented while increasing/decreasing the quantity of oxygen added into the process gas.

21. (Original) A plasma processing method for implementing a plasma process on a silicon oxide film layer formed at a workpiece placed on a second electrode by introducing a process gas containing, at least, fluorocarbon and oxygen into a process chamber, applying high-frequency power to a first electrode and said second electrode facing opposite each other inside said process chamber and thus raising the process gas to plasma, wherein;

the frequency of the high-frequency power applied to said second electrode is lower than the frequency of the high-frequency power applied to said first electrode;

the high-frequency power is intermittently applied to said first electrode; and

said plasma process is implemented while increasing the quantity of oxygen added into the process gas.

22. (Original) A plasma processing method according to claim 21, wherein;
a contact hole is formed at said silicon oxide film layer; and

the quantity of oxygen added into the process gas is increased in proportion to an increase in the aspect ratio of said contact hole.

23. (New) A plasma processing method for implementing a plasma process on a silicon oxide film layer formed at a workpiece placed inside a process chamber by generating plasma from a process gas containing, at least, fluorocarbon introduced into said process chamber,

wherein oxygen is intermittently added into the process gas,

wherein a contact hole is formed at said silicon oxide film layer, and

wherein the quantity of oxygen added into the process gas is increased in proportion to an increase in the aspect ratio of said contact hole.

24. (New) The plasma processing method according to claim 23, wherein the oxygen is cyclically added into the process gas.

25. (New) The plasma processing method according to claim 23, wherein the oxygen is added after the plasma has stabilized.